What Is Claimed Is

1. A null mutant non-human animal characterized in showing salt intake behavior similar to that of wild-type animals under water-sufficient conditions and showing much more intakes of hypertonic saline compared with wild-type animals under water- and salt-depleted conditions.

2. The null mutant non-human animal according to claim 1, wherein the function of Na_v2 gene is deficient on its chromosome.

3. The null mutant non-human animal according to claim 2, wherein the non-human animal is a rodent.

4. The null mutant non-human animal according to claim 3, wherein the rodent is a mouse.

5. A gene that codes for a protein acting as a sensor of extracellular sodium ion level.

6. The gene according to claim 5, wherein the protein is comprised of amino acid sequence shown in Seq. ID No. 3, or is comprised of amino acid sequence where one or a few amino acids are deficient, substituted, or added, in amino acid sequence shown in Seq. ID No. 3.

7. The gene according to claim 5, which is comprised of DNA that contains a base sequence shown in Seq. ID No. 2 or its complimentary sequence, and a part or whole of those sequences.

8. The gene according to claim 5, which is comprised of DNA being hybridized under stringent conditions with DNA that contains a base sequence shown in Seq. ID No. 2 or its complimentary sequence, and a part of or whole of those sequences.

9. A protein acting as a sensor of extracellular sodium ion level.

10. The protein according to claim 9, which is comprised of amino acid sequence shown in Seq. ID No. 3.

11. The protein according to claim 9, which is comprised of amino

acid sequence where one or a few amino acids are deficient, substituted, or added, in amino acid sequence shown in Seq. ID No. 3.

12. A fusion protein created by combining a protein acting as a sensor of extracellular sodium ion level and a marker protein and/or a peptide tag.

13. The fusion protein according to claim 12, wherein the protein acting as a sensor of extracellular sodium ion level is the protein according to claims 10 or 11.

14. An antibody which specifically combines with a protein acting as a sensor of extracellular sodium ion level.

15. The antibody according to claim 14, wherein the protein acting as a sensor of extracellular sodium ion level is the protein according to claims 10 or 11.

16. The antibody according to claims 14 or 15, wherein the antibody is a monoclonal antibody.

17. A host cell which contains an expression system that can express a protein acting as a sensor of extracellular sodium ion level.

18. The host cell according to claim 17, wherein the protein acting as a sensor of extracellular sodium ion level is the protein according to claims 10 or 11.

19. A transgenic non-human animal which excessively expresses a protein acting as a sensor of extracellular sodium ion level.

20. The transgenic non-human animal according to claim 19, wherein the protein acting as a sensor of extracellular sodium ion level is the protein according to claims 10 or 11.

21. The transgenic non-human animal according to claims 19 or 20, wherein the non-human animal is a mouse or a rat.

22. A method of screening a material that promotes or suppresses the function or the expression of a protein acting as a sensor of extracellular sodium ion level characterized in using a cell that

expresses a protein acting as a sensor of extracellular sodium ion level, and a subject material.

23. The method of screening a material that promotes or suppresses the function or the expression of a protein acting as a sensor of extracellular sodium ion level according to claim 22, wherein the cell that expresses a protein acting as a sensor of extracellular sodium ion level is the host cell according to claims 17 or 18.

24. A method of screening a material that promotes or suppresses the function or the expression of a protein acting as a sensor of extracellular sodium ion level characterized in using the non-human animal according to any one of claims 1 to 4 or the non-human animal according to any one of claims 19 to 21, and a subject material.

25. A material that promotes or suppresses the function or the expression of a protein acting as a sensor of extracellular sodium ion level characterized in being available through the screening method according to any one of claims 22 to 24.

26. A medical compound used for curing patients who need promotion of the function or enhancement of the expression of a protein acting as a sensor of extracellular sodium ion level, and containing the protein according to any one of claims 9 to 11 or the material that promotes the function or the expression of a protein acting as a sensor of extracellular sodium ion level according to claim 25 as its effective components.

27. A medical compound used for curing patients who need suppression of the function or the expression of a protein acting as a sensor of extracellular sodium ion level, and containing the protein according to any one of claims 9 to 11 or the material that suppresses the function or the expression of a protein acting as a sensor of extracellular sodium ion level according to claim 25 as its effective components.